

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-47 are currently pending; Claims 1, 7, 8, 16, 17, 24-26, 32, 33, 35, 38-41 are amended; and Claims 42-47 are added by the present amendment.

Support for non-cosmetic changes to claims is found in Applicant's Figure 3 and the corresponding written description in the specification. Support for new claims 42-47 is found in Applicant's Figure 3 and the corresponding written description in the specification.

The outstanding Official Action rejected Claims 8-34 and 39-41 under 35 U.S.C. § 101; rejected Claims 1-8, 10, 17, 21, 26, and 35-38 under 35 U.S.C. § 102(b) as unpatentable over U.S. Patent Application Publication No. 2002/0003210; rejected Claims 9, 13-16, 18, 22-25, 27, and 30-33 under 35 U.S.C. § 103(a) as unpatentable over Marcus in view of U.S. Patent No. 6,791,692 to Powell et al. (hereinafter "Powell") rejected Claims 11, 12, 19, 20, 28, and 29 under 35 U.S.C. § 103(a) as unpatentable over Marcus in view of Powell and further in view of Publication "EHS analysis of advanced CVD processes" to Mendecino et al. (hereinafter "Mendecino"); rejected Claim 34 under 35 U.S.C. § 103(a) as unpatentable over Marcus in view of Mendecino and further in view of U.S. Patent No. 6,124,675 to Bertrand et al. (hereinafter "Bertrand"); and rejected Claims 39, 40, and 41 under 35 U.S.C. § 103(a) as unpatentable over Marcus in view of Powell.

Applicant acknowledges with appreciation the courtesy of an interview conducted between Applicant's representatives, the Examiner, and the Examiner's supervisor on August 13, 2007. During the interview, Applicant's representatives compared the differences between Applicant's Figure 3 and Figures 2-4 of Marcus. Applicant's representatives proposed to amend Claim 1 to recite *an excitation source in fluid communication with the effluent system and configured to enter the effluent system through a second opening and*

inject a second gas into the effluent system at a position downstream from the first opening, and presented arguments that Marcus fails to disclose or suggest this feature. The Examiner indicated that further consideration would be required. Amendments and arguments similar to those discussed during the interview are incorporated herein.

Applicant submits that the rejection of the claims under 35 U.S.C. § 101 is rendered moot by the present amendment.

Claim 1 is directed to a monitoring system. The system includes an effluent system, an excitation source, and at least one sensor. The effluent system is configured to draw a first gas from a processing chamber through a first opening. The excitation source is in fluid communication with the effluent system and configured to enter the effluent system through a second opening and inject a second gas into the effluent system at a position downstream from the first opening. The at least one sensor is in fluid communication with the effluent system and located downstream from the position.

Turning now to the applied reference, Marcus describes a plasma processing device. Referring to Figure 3 of Marcus, Marcus describes particles 80A entering a momentum separator 41 through an aperture 40A and being processed through a series of chambers until a particle 80 reaches an opening 40D. Marcus describes that an analyte material 45 is introduced through an opening 40D into a hollowed cathode tube 43. As illustrated in Figure 4 of Marcus, the analyte material 45 is vaporized and swept by a helium flow, which is also illustrated in Figure 2 of Marcus by the right angled arrow designated by numeral 46. Marcus describes that the helium flow pushes the analyte material 45 into the hollowed cathode plasma 47 for subsequent excitation of atomic species.¹ Marcus further describes in the sampling region 47 that a monochromator 57 is used to sample the excited particles.²

¹ See Marcus at column 12, lines 6-14.

² See Marcus at column 11, lines 54-69 and column 12, lines 49-52.

Claim 1 is distinguishable over Marcus as the applied reference fails to disclose or suggest an excitation source *configured to enter the effluent system through a second opening and inject a second gas into the effluent system at a position downstream from the first opening*. The outstanding Official Action identifies the vacuum port 48 of Marcus as Applicant's claimed effluent system, the hollowed cathode tube 43 as Applicant's claimed excitation source, and the monochromator 57 as Applicant's claimed at least one sensor.³ However, as discussed above, Marcus merely describes the hollowed cathode tube 43 receiving an analyte material 45 that is pushed into a sampling region 47 by helium gas flow. Marcus neither discloses nor suggests that the hollowed cathode tube 43 enters the vacuum port. Furthermore, Marcus fails to disclose or suggest that the hollowed cathode tube 43 injects a second gas into the vacuum port 48 as required by Claim 1.

Additionally, Marcus illustrates the hollowed cathode tube 43 protruding into a chamber 26. Assuming, *arguendo*, that the chamber 26 is identified as Applicant's claimed effluent system, Marcus neither discloses nor suggests that the hollowed cathode tube 43 injects metastable atoms into the chamber 26. That is, Marcus merely describes a gas flow 46 from port 49 entering the chamber 26 and pushing the analyte material 45 in the hollow cathode tube 43 into a sampling area 47. Thus, due to the gas flow 46, the hollowed cathode tube 43 does not inject the analyte material 45 into the chamber 26.

Accordingly, Applicant submits that Marcus fails to disclose or suggest all the features of Claim 1 as amended. Thus, Applicant respectfully requests that the rejection of Claim 1, and the claims depending therefrom, under 35 U.S.C. § 102(b) be withdrawn.

As independent Claims 7, 8, 17, 26, and 35 are amended to recite features analogous to Claim 1, Applicant submits that the applied references fail to disclose or suggest all the features of independent Claims 7, 8, 17, 26, and 35 as amended. Thus, Applicant respectfully

³ See Official Action of May 31, 2007 page 3, paragraph 2.

requests the rejection of Claims 7, 8, 17, 26, and 35, and the claims depending therefrom, under 35 U.S.C. § 102(b) be withdrawn.

The outstanding Official Action rejected Claims 9, 11-16, 18-20, 22-25, 27-29, 30-34, and 39-41 under 35 U.S.C. § 103(a) as unpatentable over Marcus and further in view of Powell, Mendecino, and Bertrand.

As outlined above, Marcus fails to disclose or suggest all the features of independent Claims 1, 7, 8, 17, 26, and 35. Independent Claims 39-41 are amended to recite features analogous to Claim 1. Furthermore, Claims 9, 11-16, 18-20, 22-25, 27-29, and 30-34 are dependent claims. As Powell, Mendecino, and Bertrand do not cure the deficiencies discussed above for Marcus, Applicant submits that the applied references fail to disclose or suggest all the features of Claims 9, 11-16, 18-20, 22-25, 27-29, 30-34, and 39-41.

Thus, Applicant respectfully requests that the rejection of Claims 9, 11-16, 18-20, 22-25, 27-29, 30-34, and 39-41 under 35 U.S.C. § 103(a) be withdrawn.

New Claims 42-44 recite “an exhaust located downstream from the position and configured to draw at least the first gas from the effluent system.” Applicant submits that these more detailed aspects of the claimed invention are not disclosed or suggested in the applied references.

New Claims 44-47 recite that “the first gas reacts with the second gas.” Marcus fails to disclose or suggest this feature as the applied reference merely describes that a helium gas flow 46, which is a non-reactive gas, pushes the analyte material 45 into the sampling area 47. Marcus neither discloses nor suggests that the helium gas flow 46 reacts with the analyte material.

Consequently, in view of the present amendment and response, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

Respectfully submitted,

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